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Philosophical Transactions n° 211.

Fig: I.

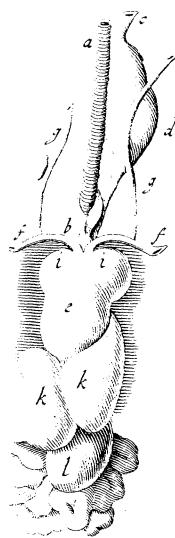


Fig: II.

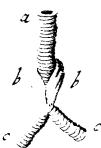


Fig: IV.

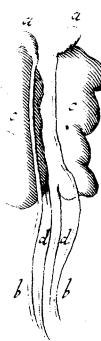


Fig: V.

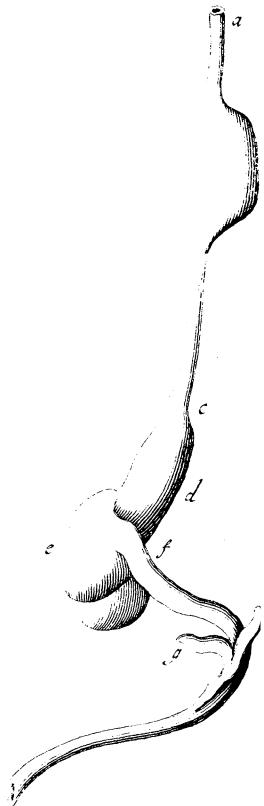


Fig: III.

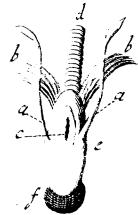


Fig: VII.

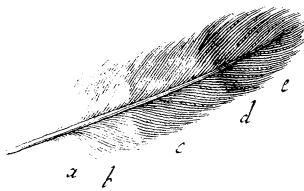
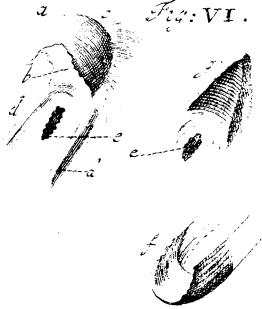


Fig: VI.



III. *Observations in the Dissection of a Paroquet, made and Communicated to the Royal Society by Mr. Rich. Waller.*

THERE is not possibly a greater variety of Species than in the Parrot-kind, whether we consider the Country, size, or colour; in which last particular no Bird prides in so great a diversity, luxuriant Nature painting him with all the silken colours of Plants and Flowers, and that in their greatest Lustre and Perfection. *Johnston* treating of these Birds, says, the Curious have observed above an Hundred sorts of them: And *Margravius*, in his History of *Brazile*, enumerates several, his sixth Species of Paroquets, which he calls *Tajete*, coming very near our Subject. But the true Description as I take it of this Bird is given by *Johnston* in his *Mantissa* to the History of Birds, Cap. 4. pag. 156. which being long, I forbear to recite; the Bird, he says, was brought by the Dutch Seamen out of *Aethiopia*, and Places near *Manicongo*.

Having kept some of these Birds, and one of them dying, in the opening thereof I took notice of some few Particulars, which I here make bold to present this Honourable Assembly with.

I. First, To give a short Description thereof. Its size is between a Sparrow and a Black-bird, with a short Neck, black Eyes, a crooked Scarlet Bill, greyish Legs and Feet, with Toes, two before, and two behind, like the Parrot; yet he never stands on one Foot to eat with the other, as Parrots do. When he stands still on the Perch his Breast and Belly shew of a curious light green, his Back, and the Feathers of his Wings are somewhat darker; on his Pinions are some short blew Feathers,

as likewise a pretty many on his Rump. His Bill is encompassed up to the Eyes with a broad beautiful Scarlet Circle, reaching also down to his Throat : This place in the Hen is of a paler Orange colour, wherein is the only observable difference. The Feathers of the Tail (which as in all small Paroquets is no longer than the Wings) are not to be seen but when he flutters or spreads it. They are about two Inches long, near the Quill of a Lemon-colour enclining to a green ; next that a Scarlet for a pretty breadth, then a narrow Thread of green on some of them ; after that a black, and last of all ending in a light green. It were not an unworthy Curiosity to examine the colours of the Feathers of Birds, and how the same individual branch of the stem of a Feather, as here, comes to be tinged with such diversity of Colours ; but that by the by.

2. Having opened the *Thorax* and *Abdomen* (if I may so call them) by blowing into the *Aspera Arteria*, a large Cavity or Bladder was raised up all along the *Abdomen* to the edges of the *Os Ischion*, and fastened to the Gizzard, containing in it all the Guts and Gizzard, but excluding the Heart and Liver. A conformation like this is observed in all Birds, and peculiar to them, and mentioned by *Perault* in his *Mechanique des Animaux*. The Air received by the Lungs refreshing and carrying off the noxious steams from the Entrails, and is not confined, as in Men and Quadrupedes, to the *Thorax* only, by a *Mediastinum*. Why this is so in Birds may be farther enquired.

3. The *Aspera Arteria* differs from that of most other Animals, having not only a *Larynx* at the top thereof, as is usual, but another also at its entrance into the Breast, where it is divided, and branches it self into two. From this Structure, as I have been told, common to all Parrots, possibly it may be that they can so readily imitate Humane Voices ; but this Creature we dissected never

never attempts an imitation of words, making only a shrill chirping Noise, doubling the Tone, or making it eight Notes lower, as a stopt Organ-Pipe is an Eighth to the same open. This lower *Larynx* may assist the weak Fabrick of so small a Creature as a Parrot to counterfeit so Basse a Voice as a Man's; it being observed by some Ingenious Persons, that Parrots are *Ventriloqui*, and whether all Ventriloquous Cleats may not by Nature be framed for such an Imposture, may be Queried, if the Bodies of any such should be dissected.

4. The *Heart*, in proportion to the Animal, was large, and Liver small, as may be seen by the Figure. There was nothing that I observed extraordinary in the Testicles or Kidneys, however I have given a Figure thereof.

5. The *Tongue* was broad and thick, at the end somewhat like a Man's, whence a Parrot has its Name *περνάντος*, the extremity of it was armed with a black horny cover.

6. Having done with those Parts that relate to the Air and Blood, to proceed to those that concern the Reception and Digestion of the Food: It has besides the Gizzard two Craws; the uppermost Craw being only a Receptacle or Sack for the Food (which is Canary Seed) to be again committed to the Mouth of this Bird, where it is again chewed, having before been only husked; this Animal ruminating as some Quadrupedes do, and I have observed this Bird when upon the Perch not only bring its Food again up into its Mouth, and there chew it, but when the Cock and Hen sit together on the Perch, he will put it out of his into the Hen's Mouth. Their manner of chewing is thus: The under Bill being much shorter, shuts within the upper, or against the Roof of the Mouth, which is fitted with several rows of very small and scarce to be seen cross-bars; as the Mouths of Horses, Dogs, and some other Animals are: These Bars

are not soft, but horny, as being part of the upper Bill, so that the Bird by carrying the edge of the under Bill and end of the Tongue against the ridges in the upper, breaks and reduces to a Pap the Seeds that have been first moistened in the Craw ; to expedite which action the upper Bill is joyned just below the Eyes of this Bird, as the *Crocodile*'s upper Jaw has erroneously thought to have been, but is really so here. The Food being thus macerated, is by the *Gula* again committed to the second Craw, but before its entrance into it, it passes by an abundance of small Glands placed in that part of the *Gula*, that the Food may squeeze out of them in its passage a Juice, of what necessity in Digestion may be enquired. From hence the Food passes to the Gizzard, or proper Ventricle, small in comparison of the *Ingluvies* or Crop ; where by several small Stones pickt out of the Sand given it, by the motion of the Gizzard it is comminuted, and thence transmitted to the Intestines, on the sides of which within a small distance is placed the *Pancreas*. The proportions of all these Parts to each other will be best seen by the Figures, which were purposely designed as big as the Life.

The Explication of the Figures.

Fig. I.

- a. *The Aspera Arteria.*
- b. *That part which forms as it were another Larynx.*
- c. *Part of the Gula.*
- d. *The upper Craw.*
- e. *The Heart.*
- f. f. *The Venæ axiliæres.*
- g. g. *The Jugulars.*

h. *A small Gland on one of them.*

i. i. *The two Auricles of the Heart.*

k. k. *The Liver.*

l. *The Gizzard.*

Fig. II.

a. *The Trachea.*

b. b.

- b. b. *The Larynx, by which Parrots are rendered Ven-triloqui.*
- c. c. *The two branches of the Trachea.*
- c. *That part of the Gula, whose inside is Glandulous.*
- d. *The lower Craw.*
- e. *The Gizzard or Ventricle.*
- f. *The first Intestine.*
- g. g. *The Pancreas.*

Fig. III.

- a. a. *The Cornua of the Os Hyoides.*
- b. b. *Two Muscles of the Larynx.*
- c. *The Fissure or Glottis.*
- d. *The Trachea.*
- e. *The Tongue.*
- f. *The horny end thereof.*

Fig. IV.

- a. a. *The Testes.*
- b. b. *The Diferentia,*
- c. c. *The Kidneys.*
- d. d. *The Ureters.*

Fig. V.

- a. *The upper part of the Gula.*
- b. *The first or upper Craw.*

Fig. VI.

- a. *The upper Bill.*
- b. *The inside of it.*
- d. d. *The upper Jaw.*
- c. *The place where the upper Bill is moveable.*
- e. *A passage to the Nostrils*
- f. *The lower Bill.*
- g. *The upper Bill in a another posture, to shew the small ridges therein.*

Fig. VII.

One of the Feathers of the Tail.

- a. *That part furnisht only with a white Down.*
- b. *The part that is yellow.*
- c. *The Scarlet Part.*
- d. *Where it is black.*
- e. *The Green Part.*